

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A guarded power saw assembly comprising:
 - a base for supporting a work-piece;
 - a circular saw blade;
 - 5 a drive motor operatively connected to the saw blade;
 - a head supporting both the drive motor and the saw blade, with the head mounted to the base for movement through an arc about a primary pivot axis from a raised position above the base to a lowered position engaging the base;
 - an arm having a proximal end and a distal end, the proximal end mounted to
 - 10 the head for movement through an arc about a secondary pivot axis and the distal end supporting the circular saw blade;
 - a first locking means operatively interposed between the head and arm, the first locking means having a locked condition in which the arm is locked to the head so as to keep the saw blade enclosed by the head and an unlocked position in which
 - 15 the arm is pivotally movable with respect to the head to allow a portion of the blade to exit the head; and
 - a handle extending from the head and operatively connected to the arm,
 - wherein the handle is movable to first rotate the locked together head and arm with respect to the base towards the work-piece and, after the head has engaged the
 - 20 base, to then pivot the arm with respect to the head such that the saw blade exits the head to cut the work-piece.
2. An assembly as claimed in claim 1 further comprising a second locking means operatively interposed between the head and the base, the second locking means
- 25 having an unlocked condition in which the head is pivotally movable with respect to the base and having a locked condition in which the head is locked to the base after the head has engaged the base and the arm has commenced rotation with respect to the head.

3. An assembly as claimed in claim 2 further comprising an intermediate locking means operatively interposed between the head and the arm, the intermediate locking means operable to lock the arm to the head when an attempt is made to lift the head away from engagement with the base,

5 wherein the intermediate locking means is operable after the first locking means has unlocked and prior to the second locking means engaging.

4. An assembly as claimed in claim 3 wherein the base has a work-piece receiving recessed channel, the channel defined by a pair of spaced apart parallel first
10 and second channel walls joined at their lower sides by a channel floor,
wherein the channel is longitudinally disposed perpendicular to the plane of the blade.

5. An assembly as claimed in claim 4 wherein the assembly includes a work-
15 piece clamp assembly.

6. An assembly as claimed in claim 5 wherein, after initial pre-adjustment of the clamp assembly, the clamp assembly is automatically actuated as the head is lowered towards the work-piece.

20

7. An assembly as claimed in claim 6 wherein the clamp assembly comprises:
a pair of work-piece clamps each slidably mounted for movement across the channel through respective spaced apart slots in the first channel wall towards the second channel wall, the clamps spaced apart for clamping the work-piece on
25 respective sides of the blade; and

a pair of respective clamp mechanisms, each operably connected between the head and its respective clamp,

whereby, as the head is lowered towards the base, the clamp mechanisms move the clamps across the channel to clamp a work-piece located in the channel.

30

8. An assembly as claimed in claim 7 wherein each clamp mechanism comprises:
a linkage assembly operably connecting the clamp to the head; and
an adjusting means for adjusting the position of the clamp with respect to the linkage assembly in a direction across the channel,

5 wherein the adjusting means of a first of the clamp mechanisms allow its clamp to be moved to a pre-adjusted position adjacent or abutting the work-piece and the adjusting means of a second of the clamp mechanisms allow its clamp to be moved to a pre-adjusted position adjacent or abutting the work-piece or the second channel wall.

10 9. An assembly as claimed in claim 8 further comprising a work-piece clamp interlock means for preventing the commencement of sawing,

wherein the interlock means disengages to allow the commencement of sawing as the locked together head and arm rotates towards the work-piece only
15 when both work-piece clamps have been moved to their pre-adjusted positions.

10. An assembly as claimed in claim 9 wherein each linkage assembly comprises:
a first portion;

a second portion overlapping the first portion to define an overlapping
20 portion; and

a compression spring mounted within the overlapping portion for compression when the pre-adjusted clamp is actuated to engage a work-piece or the second channel wall.

25 11. An assembly as claimed in claim 10 wherein the interlock means comprises a blocking means for preventing the head being lowered sufficiently towards the base to allow disengagement of the first locking means, the blocking means having a blocking surface operably connected the second portion of the linkage assembly,

wherein, in use, if both clamps are not in their said pre-adjusted positions, the
30 blocking surface moves to a position preventing the head being lowered sufficiently

towards the base to allow disengagement of the first locking means.

12. An assembly as claimed in claim 11 wherein the blocking means further comprises a pin positioned between the head and the blocking surface, the blocking
5 pin held up by the blocking surface to prevent the head being lowered sufficiently towards the base to allow disengagement of the first locking means when either clamps is not in its said pre-adjusted position.
13. An assembly as claimed in claim 12 wherein the head has a removable cover
10 shaped to guard the blade.
14. An assembly as claimed in any one of claims 2 to 13 wherein the primary and secondary pivot axes are parallel and spaced apart.
- 15 15. A guarded power saw assembly comprising;
a base for supporting a work-piece;
a circular saw blade;
a drive motor operatively connected to the saw blade;
a head supporting both the drive motor and the saw blade, with the head
20 mounted to the base for movement through an arc about a primary pivot axis from a raised position above the base to a lowered position engaging the base;
an arm having a proximal end and a distal end, the proximal end mounted to the head for movement through an arc about a secondary pivot axis and the distal end supporting the circular saw blade;
25 a first locking means having a first latch member mounted to the arm and a second latch member mounted to the head for movement with respect to the head and lockingly co-operable with the first latch member, the first locking means having a locked condition in which the arm is locked to the head so as to keep the saw blade enclosed by the head and an unlocked position in which the arm is pivotally movable
30 with respect to the head to allow a portion of the blade to exit the head; and

a handle extending from the head and operatively connected to the arm, the handle movable to first rotate the locked together head and arm with respect to the base towards the work-piece and, after the head has engaged the base, to then pivot the arm with respect to the head such that the saw blade exits the head to cut the work-piece,

whereby the first locking means is unlocked by movement of the second latch member as it engages a base-dependent member when the head engages the base.

16. An assembly as claimed in claim 15 wherein the first latch member comprises a pin and the second latch member comprises a pivotally mounted primary latch arm, the primary latch arm having a primary recess shaped and positioned to lockably receive the pin.

17. An assembly as claimed in claim 16 wherein the primary latch arm is biased to move the primary recess towards the pin.

18. An assembly as claimed in claim 17 further comprising:
a second locking means operatively interposed between the head and the base, the second locking means having an unlocked condition in which the head is pivotally movable with respect to the base and having a locked condition in which the head is locked to the base after the head has engaged the base and the arm has commenced rotation with respect to the head.

19. An assembly as claimed in claim 18 wherein the second locking means comprises:
a locking wall depending from the arm or handle;
a projection extending from the base,
wherein the projection and locking wall are co-operably arranged to prevent, or substantially limit, movement of the locking wall about the primary pivot axis, thereby preventing, or substantially limiting, movement of the head with respect to

the base, after the head has engaged the base and the arm has commenced rotation with respect to the head about the secondary pivot axis.

20. An assembly as claimed in claim 19 wherein the locking wall is arcuate having
5 a centre of radius coincident, lying on, or adjacent to the secondary pivot axis.

21. An assembly as claimed in claim 20 further comprising an intermediate
locking means operatively interposed between the head and the arm, the
intermediate locking means operable to lock the arm to the head when an attempt is
10 made to lift the head away from engagement with the base,
wherein the intermediate locking means is operable after the first locking
means has unlocked and prior to the second locking means engaging.

22. An assembly as claimed in claim 21 wherein the intermediate locking means
15 comprises:

the pin mounted to the arm; and

a supplementary latch member pivotally mounted to the head for movement
with respect to the head and lockingly co-operable with the pin, the supplementary
latch arm having an supplementary recess shaped and positioned to lockably receive
20 the pin, the supplementary latch arm biased to move the supplementary recess
towards the pin,

whereby the intermediate locking means is unlocked by movement of the
supplementary latch member as it engages the base-dependent member when the
head engages the base but will re-lock, due to extra length within the supplementary
25 recess, if an attempt is made to lift the head after the first locking means has
unlocked and prior to the second locking means engaging.

23. An assembly as claimed in claim 22 wherein the base has a work-piece
receiving recessed channel, the channel defined by a pair of spaced apart parallel first
30 and second channel walls joined at their lower sides by a channel floor,

wherein the channel is longitudinally disposed perpendicular to the plane of the blade.

24. An assembly as claimed in claim 23 wherein the assembly includes a work-piece clamp assembly.

25. An assembly as claimed in claim 24 wherein, after initial pre-adjustment of the clamp assembly, the clamp assembly is automatically actuated as the head is lowered towards the work-piece.

10

26. An assembly as claimed in claim 25 wherein the clamp assembly comprises:
a pair of work-piece clamps each slidably mounted for movement across the channel through respective spaced apart slots in the first channel wall towards the second channel wall, the clamps spaced apart for clamping the work-piece on respective sides of the blade; and

15

a pair of respective clamp mechanisms, each operably connected between the head and its respective clamp,

whereby, as the head is lowered towards the base, the clamp mechanisms move the clamps across the channel to clamp a work-piece located in the channel.

20

27. An assembly as claimed in claim 26 wherein each clamp mechanism comprises:

a linkage assembly operably connecting the clamp to the head; and

an adjusting means for adjusting the position of the clamp with respect to the

25 linkage assembly in a direction across the channel,

wherein the adjusting means of a first of the clamp mechanisms allow its clamp to be moved to a pre-adjusted position adjacent or abutting the work-piece and the adjusting means of a second of the clamp mechanisms allow its clamp to be moved to a pre-adjusted position adjacent or abutting the second channel wall.

30

28. An assembly as claimed in claim 27 further comprising a work-piece clamp interlock means for preventing the commencement of sawing,

wherein the interlock means disengages to allow the commencement of sawing as the locked together head and arm rotates towards the work-piece only when both work-piece clamps have been moved to their pre-adjusted positions.

29. An assembly as claimed in claim 28 wherein each linkage assembly comprises: a first portion;

a second portion overlapping the first portion to define an overlapping portion; and

a compression spring mounted within the overlapping portion for compression when the pre-adjusted clamp is actuated to engage a work-piece or the second channel wall.

30. An assembly as claimed in claim 29 wherein the interlock means comprises a blocking means for preventing the head being lowered sufficiently towards the base to allow disengagement of the first locking means, the blocking means having a blocking surface operably connected the second portion of the linkage assembly,

wherein, in use, if both clamps are not in their said pre-adjusted positions, the blocking surface moves to a position preventing the head being lowered sufficiently towards the base to allow disengagement of the first locking means.

31. An assembly as claimed in claim 30 wherein the blocking means further comprises a pin positioned between the head and the blocking surface, the blocking pin held up by the blocking surface to prevent the head being lowered sufficiently towards the base to allow disengagement of the first locking means when either clamps is not in its said pre-adjusted position.

32. An assembly as claimed in claim 31 wherein the head has a removable cover shaped to guard the blade.

33. An assembly as claimed in any one of claims 15 to 32 wherein the primary and
5 secondary pivot axes are parallel and spaced apart.

34. A guarded power saw assembly substantially as hereinbefore described with reference to Figures 1 to 13.

10 35. A guarded power saw assembly substantially as hereinbefore described with reference to Figures 14 to 20.